

ITEMS OF INTEREST.

VOL. VIII. . PHILADELPHIA, AUGUST, 1886.

No. 8.

Notes from the Profession.

"PULPLESS PERMANENT TEETH."

W. S. ELLIOTT, D. D. S., M. D.

Remarks suggested by the perusal of an article on the above subject in June *ITEMS*.

"Pulpless permanent teeth should be well cleaned."

To well cleanse some of these is an "impossibility."

"Successful treatment of these depends much on the condition, whether septic or antiseptic." (Aseptic?)

So much as is contained in the above have I for my guide in the treatment of a pulpless tooth, and I fully recognize the reasonableness of a thoro cleansing of the pulp canal. It may prove impossible. I know that it is in a decidedly septic condition; but, as "successful treatment depends much on the condition, whether septic or antiseptic," I will not be discouraged. I am further directed to cleanse the root as thoroly as conditions permit. How to do so I am not informed; but I am *not* to use a drill for fear of piercing through to the alveolus. In the absence of more definite guidance, I will use the syringe and probe; and, if it is impossible to establish a thoro cleansing, never mind, as I am made to understand that successful treatment depends much on the very septic (or "antiseptic") condition which is present. After this, to me inefficient procedure, I will use, as directed, the $\frac{1}{2000}$ sol. of bi-chlorid of mercury, then a pellet of medicated cotton which is packed into the cavity and sealed with gutta percha and wax. As I am not informed what is the medicin to be used with the pellet, and wishing to follow the text as nearly as possible, I must necessarily use the cotton unmedicated. This must be removed in two or three days, I so inform my patient. With tranquil mind and a consciousness of having done my whole duty, I wait the day of appointment. The following morning, however, my patient returns complaining of a sore tooth and a swollen face! I now

fall back on my own judgment, which dictates that I must remove the gutta percha and cotton. I do so, and obtain relief. My faith in the teachings is somewhat shaken; however, I read on and find that "this is done where roots are entirely pulpless." Ah! I see, I have made a mistake. In the first place the tooth should have been thoroly cleansed—which was "impossible;" secondly, "successful treatment depends much on conditions whether septic" (or antiseptic), and here I have been using antiseptic medicin when the conditions were already just right for successful treatment! I confess I am a little confuscated, but I choose to follow my guide so far as I can understand him. I will try again. I recognize that this tooth contains a portion of dead and disintegrated pulp, and notwithstanding this I will be doing right by adopting the following: Saturate a pellet of cotton with oxy-chlorid zinc and force this to every part of the canal, using gentle pressure. If pain ensues—let up. I assure my patient that the pain will soon subside, and after two or three weeks I will complete the operation by a permanent filling. But the pain does *not* subside, it grows more intense; pericementitis, rigor, fever, suppuration and a discharging abscess follow. Unfortunately for my patient's comfort, and my own reputation, my treatment was not as successful as I was led to expect. What next? A pretending physician assured his patient that he could not exactly cure him of a given disease, but he could administer something that would give him fits, and he was h—— on fits. Here we have the climax—"an abscess discharging through a fistulous opening in the gum." What do I learn is the treatment? The tooth should be cleansed. I am not permitted to use the drill, and yet I am to force into the root chlo. and oxy-chlorid zinc. I am assured that granulation will surely follow. If it does not, what then? Except in abscess, in cases of undiminisht pain, the *dernier* resort is a hot raisin placed on the gum, which in some instances is pronounced a specific. No provision is made for the exceptional instances, only as I have cited, and, if I have no more enlightenment than is to be gained from the text quoted, I would quite despair in establishing an envious practice.

Antral Catar.—Dr. L. C. Anderson, of Lake Charles, La., says: After unsuccessful treatment for six or seven months with iodoform, boracic acid, carbolic acid, etc., this disease finally yielded to two weeks' daily treatment with a solution of bi-chlorid of mercury, 2 grains to the oz.; one grain to the oz. used for a week having failed to benefit. There had been no relapse at the expiration of a year. The case had been under treatment by the physician for three years previous to coming to the dentist.

IS DENTISTRY RESPONSIBLE?

DR. E. A. BOGUE, NEW YORK.

Description of the left upper row of teeth of a lady about forty years of age, unmarried, healthy, leading an active life and a good deal out of doors.

The teeth are generally of good quality, regular and well formed.

The file has been freely passed between each two teeth from the incisors back to the first molar taking off the tuberosity from both bicuspid, the cuspid and the incisors.

Proximal cavities in all the teeth have been carefully filled with amalgam, except the anterior side of the first bicuspid which is filled with gold.

The patient has been well instructed about cleansing, but has been thoro only once a day.

She has eaten on the average three times a day.

Six or perhaps seven years have gone by since the teeth were put in order which is only one-tenth of a life-time and the following condition of things exists :—

The entire anterior face of the first molar is decayed away, the cavity extending under the anterior buccal cusp back to the middle depression.

In extent this cavity is three or four times the size of the original amalgam filling, which, owing to the jug shape of the cavity still remains in the tooth.

Removing this filling, the gum is found largely uncovered thru the decay which has taken place on the gingival floor of the cavity, so that an instrument past straight into the cavity on the grinding surface, goes directly against the gum.

The molar leaning forward a little increases the difficulty of repairing that particular damage.

The prominence of the tuberosity of the molar leans over against the shoulder on the bicuspid, that was formed by the file in such a way as to make a V shaped opening between the teeth, with the larger end of the V toward the gum.

Food has been crowded into this space and retained there, it being beyond the power of the patient to remove it.

The posterior side of the second bicuspid was largely decayed at the cervical margin, causing pain.

The cavity extended considerably below the gum, while the filling in the grinding surface and more exposed portions of the tooth remained surrounded with good walls.

The tooth substance that would enable one to cap the pulp with a non-conductor, has been taken away by the file and subsequent decay.

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This decay has taken place at the exact points where food has been confined in contact with the tooth, and those points are considerably removed from the regions which are generally attacked by decay.

The usual regions for decay on the proximal sides of teeth of natural form, are just above the contact of the tuberosities on upper teeth, and just below the point of contact in lower teeth.

The reason for decay in this position is apparently the accumulation of food, in which fermentation goes on, with the formation of acids, which in a nascent state act more energetically than in any other condition.

This region has by the filing process been transferred in this instance, to the region just at the margin of the gum and above it, on the proximal sides of the two teeth and on the posterior, cervical and gingival sides of both bicuspid.

The reason for this locality being specially attacked by this recurrent caries, is, that, in the process of filing, the widest space between the teeth was left on the buccal side instead of on the lingual as a convenience to the operator.

It will be noticed that natural teeth in their normal forms and positions approximate one another most nearly or touch, if at all, on the buccal and labial sides, and never on the lingual.

If through mal-formation or irregularity in position, the teeth touch at any other points, decay results in the corresponding regions, just as it does where the file has changed the usual point of contact from one locality to another.

The posterior side of the first bicuspid and the anterior side of the second, are very considerably decayed above the margin of the gum.

The posterior side of the first bicuspid being the worst, evidencing the greater difficulty that was experienced in filling it and the greater chance of defects in excavation or filling or both.

The grinding surface of both teeth is in fairly good condition, the posterior tooth being filled with amalgam, the anterior with gold.

Is dentistry responsible for any of the bad conditions existing in this mouth?

Gold Solder.—Dr. McKellops, of Cincinnati, gives the following: Gold, (such as is used for the plate) 89 parts; silver, 7 parts; copper, 4 parts. In making it he always takes his gold from scraps of the same plate that is to be soldered.

Dr. James Lewis, President of the New England Dental Society, says that the use of tobacco by dentists is a nuisance. He adds: I have had patients come to me who stated that they left their former dentist because it was impossible to stand the dentist's tobacco odor.

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THE VIRGINIA LAW, AND PHYSICIANS IN DENTISTRY.

DR. HENRY J. MORGAN, ALLENDALE, VA.

MR. EDITOR:—In June number of ITEMS OF INTEREST I notice that the Virginia dental law has carried the farce to a climax. It has been the custom, for some years, by most dental colleges to credit one course in a dental college to a one course medical student, or an M.D., but the Virginia law goes further and allows an M. D. to practice dentistry without a diploma from a dental college or even an examination by the dental board. Now it is notorious that M. D's, as a class, know less about the teeth and their associate parts than they do of any other organs of the human anatomy. What little a few of them know has been learned during the past few years, from the dental profession. In fact, a large majority do not know enough to be able to diagnose a case which should be sent to an intelligent dentist—but, treat it for weeks or perhaps months ignorantly and ineffectually, frequently using poultices and the lancet when the very opposite treatment is indicated by the disease, causing untold suffering, and, many times, disfiguring the patient for life, and yet such men are put on a par, by the great state of Virginia, with those who are required to study two full years under a competent preceptor, take two full courses in a reputable Dental College, or stand an examination before a state board. The Dental Colleges do but little better when they credit an M. D., and much worse, when they credit a first course student in medicine with one full course at a Dental College. It is about time this absurdity should be exploded, for it is well-known that the letters M. D. stand as often for *Much Duncie* as they do for Medical Doctor. In fact, the medical schools are far behind the dental; they do not even require a literary certificate or an examination before Matriculation, notwithstanding it is far more necessary that an M. D. should possess a first-class literary education than a D. D. S., as the former has the lives as well as the welfare of the community in his hands. And again, dentistry proper is almost exclusively mechanical,—so-called scientific dentists to the contrary notwithstanding,—for even Riggs' disease, (now fashionably called Pyorrhea Alveolaris,) the most formidable enemy that the dental profession has to deal with, is less understood and still less successfully treated than any other dental disease. Now the worse of it is, young men, to save expense—(their sole object being to make money) take a first course at a Medical College, *near home*, get a diploma with one course at a Dental College, and are to-day a disgrace to the profession and a reproach to the college that graduated them. Understand me, I have no quarrel with the medical profession, it was my first love, but I wish to *jealously* guard the dental profession of which I am now a member.

GANGRENOUS ULCER IN THE MOUTH, AND BLOOD POISONING.

DR. C. W. PURCELL, ST. MARY'S, O.

January 9th I was called in consultation with Dr. S., to see F. B., aged 31, German. The case was a foul gangrenous ulcer about the size of a silver dollar, situated on the right side, at the angle of the superior and inferior maxilla, extending upward and involving the hard and soft palate. His teeth were seriously carious, and incast in such material that would lead us to suspect that, tho his stomach had been served, his teeth had been neglected. Several of the molars were involved in the area of ulceration; these we extracted.

There was high temperature, dry skin and sallow complexion, which increased with the extension of the ulceration and absorption of septic matter.

He was put on antipyretic doses of quinia with aconite, digitalis and pot. iodid internally, and a wash consisting of potassium chlorate and carbolic acid, to be used quite freely. As an excharotic, a solution of crystallized carbolic acid was applied once a day.

On this treatment the patient's physical condition was somewhat improved, but the ulceration continued.

January 9th I found him in the following condition: Temperature, $102\frac{1}{2}$; pulse, 120; skin, dry and sallow; teeth and tung covered with a heavy sordes; no pain; ulceration involving the posterior two-thirds of the right side of the mouth, extending to the median line of the hard palate, and involving the upper and lower maxilla to the anterior third. But little change was made in the treatment, and having nothing stronger with me, as an excharotic, I again applied the carbolic acid, after I had removed a portion of the diseased tissue.

January 10th: Temperature $102\frac{1}{2}$; pulse, 120. Removed more of the gangrenous mass and applied nitric acid. Same treatment continued.

January 11th: Temperature, $102\frac{1}{2}$; pulse, 120; weak line of demarkation forming on the anterior of hard palate, while on the posterior, ulceration had extended beyond the median line. Applied nitric acid and ordered stimulants.

January 11—5 P. M.: Temperature $100\frac{1}{2}$; pulse, 120 and strong. The gangrenous mass was removed and nitric acid applied.

January 12th: Patient died at 5 A. M.

This man was perfectly rational to the last, and up to a short time before death, had no idea of approaching dissolution.

There are many interesting features about this case. Whence this gangrene? Gangrene in the mouth is a very rare affection in grown people, unless caused by the indiscriminate use of mercury or from syphilitic virus. Many years ago, after hanging my sign out, I

made my first visit to see a case of this kind. It was a child two or three years old. As soon as I entered the house I encountered that *peculiar* odor which told its nature and its cause. The whole mouth was involved. The slufing had penetrated the lips. That same night a tooth loosened and past down into the windpipe and caused death. The attending physician, whose boasted qualifications were a practice of thirty years, treated it for diphtheria, and the railroad refused to carry it.

But our present case is that of a man at the middle of life, who has always enjoyed good health, except a slight disturbance from boils during the past year or two, and he had taken no mercury. I ask whence this gangrene? Inspect the teeth and the cause is no longer a mystery. They were in an exceedingly bad state, and acted as a poison, causing a congestion of the surrounding tissue, followed by phlegmonous inflammation and gangrene. In examining the gums of persons who have bad teeth caused by uncleanness, we find them of a deep livid hue, soft and spongy, bleed on the slightest provocation; hence we can see how readily an exaggerated case of this kind can result in the complete dissolution of the parts. By removing the involved teeth and improving the healthfulness of the mouth, the gums and contiguous parts generally resume their normal condition.

We learn that for some time prior to the late illness of this man he had occasional disturbances, apparently malarial in character, accompanied with numerous small "boils" over his body, but it appears that these symptoms were removed by the administration of quinia and Fowler's solution of arsenic. Now comes the question, Was this septicemia the result of the gangrene, or was there not a gradual blood poisoning taking place prior to the manifestation of the gangrenous ulceration? I am inclined to the latter view.

Septicemia means "putrid blood," and those numerous boils, or that vesicular eruption as it might be called, was one of the many symptoms which generally develop in the course of blood poisoning. They indicate an unhealthy state of the blood. Quinia and Fowler's solution being powerful restoratives, improved the general tone of the system, and partially overcame the effects of the septic poison.

HEATING VULCANIZERS.

About one year ago I bought a small gasoline stove, "The Bee," one burner, for office use. I tried it as a heat producer in vulcanizing; it workt like a charm. I regulate the heat by turning the gas on or off, and by using thin iron plates under the oven. It is the *cleanest*, cheapest, and easiest operated of anything I ever used.

Salem, Ill.

W. M. FINLEY.

THE NERVES AND THEIR FUNCTIONS.

DR. GARRETT NEWKIRK, CHICAGO.

Common substitutes for the words *sensitive* and *motor* are the terms *afferent* and *efferent*, meaning to convey in and out. So the central cells are said to convert afferent into efferent impulses, or sensation into motion.

As a slight afferent impulse may be multiplied by the central cells into a manifestation of force greatly disproportionate (as, in a case of convulsions from slight peripheral irritation), it is evident there must be some means of limiting such extreme action; otherwise there would be continually, as there is occasionally, in abnormal conditions, great waste of energy.

So there are, first, limitations of anatomy. The cord and brain are in segments or divisions, each division being set over special parts and functions. The dividing lines may not be traced, but there is no doubt of their existence. Therefore, an afferent impulse soon or late reaches a point beyond which it may not readily go.

Secondly, there are certain tracts, so it is believed, the office of which is inhibitory. That is, it is their business to "put on brakes." We know there are such tracts of substance in the brain, because, by stimulating certain nerves that proceed from these parts, we can slow the action of the heart and lungs. Medicines like *veratrum viride* and *digitalis* act on certain central cells, and thru them by fibers of the pneumogastric and spinal-accessory nerves. Stimulation of these fibers inhibits heart action,—reduces the number of beats per minute.

When we speak of a nerve, the idea in our mind is ordinarily that of unity. We think of the nerve as one thing. But let us examine for a moment one of these, say a spinal nerve.

A spinal nerve consists of two nerves. These have entirely different offices. They go together merely for the sake of convenience,—first, in getting out of the bony canal in which the cord lies, and, second, convenience of distribution. But we call the two together a nerve. Let us say, for illustration, it is a rope of two strands. These strands are made of threads, and the threads are bundles of fibers or filaments. We can see the rope, the two strands before they join, or we can separate the coarser threads so that they may be seen with the naked eye, but the filaments only with the microscope. Unlike the strands and threads of a rope, however, the parts of the nerve are not twisted on each other, but lie parallel, inclosed by a common sheath.

The diameter of the fibrilla varies from the $\frac{1}{1000}$ to $\frac{1}{10000}$ of an inch. Supposing the average to be $\frac{1}{5000}$, and multiplying this into

itself, we have 25,000,000 as the possible number in a cord containing the equivalent of a square inch.

If Chicago were connected with the outside world by a like number of telegraph wires, these wires, laid as closely as possible, would fill four of the principal streets fifty feet deep. Allowing forty wires to each person, it would require the services of every man, woman, and child in the city to operate them.

But the aggregate of the diameters of the nervous trunks of the body would be not one but several inches.

The two strands of the rope—the spinal nerve—are to all appearances and analysis alike, yet they convey energy only in opposite directions. One (the posterior) is the afferent wire, conveying impressions from without inward. The other is the efferent wire, conveying motive force from the central cells to parts without.

These lines as electricians say, complete a circuit. Suppose, for example a needle-point enters my finger. The sensitive impulse goes by the fibers of the afferent strand to the central cells in the spinal cord. From the central cells a motor impulse is returned by the efferent branch to the arm, hand, and fingers, to withdraw from the offending body. The point of departure of the sensitive impulse is the terminal point of motor energy, and the circuit is complete. It is possible, too, that the hand may be withdrawn as soon as or even before I am conscious of pain. How is this?

It is that only the cranial nerves have an immediate, direct connection with the brain; that sensations going by way of the cord advance by relays, as it were. That is, the sensitive dispatch is first received by the central cells in the gray matter of the cord, and by these re-transmitted along the lateral or posterior columns to the centers of consciousness. But while the re-transmitted message is going upward, the motor impulse has already gone outward to withdraw the member. By thus taking the subject in hand, the spinal cells save time, and even the thousandth part of a second is valuable when a hand is in the fire. If deliverance always had to wait for the longer circuit of consciousness and will, the amount of injury might be greatly increased.—*Ill. Trans.*

Scientific Attainments.—There is no reason in the nature of things why the student who is destined for a scientific career should not in the first place go thru a course of instructions such as would insure him a practical acquaintance with the elements of each of the great divisions of mathematical and physical science; nor why this instruction in what I may call the institutes of science should not be followed by more special instruction, covering the whole field of

that particular division in which the student eventually purposes to become a specialist. It must be recognized that science, as intellectual disciplin, is at least as valuable, as knowledge, and is at least as important, as literature, and that the scientific student must no longer be handicapt by a linguistic burden, the equivalent of which is not imposed on his compeer.

The reason why our young people are so ofn scandalously and lamentably deficient in literary knowledge, and still more in the feeling and the desire for literary excellence, lies in the fact that they have been withheld from a true literary training by the pretense of it, which too ofn passes under the name of classical instruction. Nothing is of more importance to the man of science than that he should appreciate the value of style, and the literary work of the school would be of infinit value to him, if it taut him this one thing. But I do not believe that this is to be done by what is called forming one's self on classical models, or that the advice to give one's days and nights to the study of great writers is of much value. Aping somebody else does not help us to express ourself. A good style is the vivid expression of clear thinking, and it can be attained only by those who will take infinit pains to purge their own minds of ignorance and half-knowledge, and to clothe their thots in the words which will most fitly convey them to the minds of others. I can conceive no greater help to our scientific students than that they should bring to their work the habit of mind which is implied in the power to write their own language in a good style. But this is exactly what our present so-called literary education so ofn fails to confer, even on those who have enjoyed its fullest advantages ; while the ordinary school-boy has rarely even been made aware that its attainment is a thing to be desired.—*Prof. Huxley.*

HEREDITY OF TEETH.

Prof. Widner, of Baltimore, says : Most all our literature has taut us to believe that we inherit the teeth from the mother. As far as my information goes, eight children out of ten take the father's teeth. A cross between the white man and the squaw gives a contracted arch. Any of you can pick out the skull of a half-breed by the contracted arch. In the half-breed you get both contraction of the arch and inferior teeth. Nature has some most distinct laws in regard to this. When you cross an ass with a mare you get a mule always the same. You reverse the cross and you get a very indifferent kind of animal, and one very different from the mule. In the father you get not only the characteristic teeth but the characteristic jaws. There does not seem to be a single exception. I have kept a most careful diary of my own patients. The heredity of teeth is a most important matter to us.

THORONESS AND EXCELLENCE IN DENTISTRY.

E. S. CHISHOLM, TUSCUMBIA, ALA.

Extracts from an Essay read before the Tennessee Dental Association in 1873.

Thoroness and excellence in dentistry presupposes a thoro knowledge of the normal and abnormal conditions of the mouth. Such knowledge is one of the groundworks of *excellence*. The intimate relationship existing between the teeth and the entire system requires, too, a knowledge of the *whole* organism of man. Without this we can form no true estimate of the nature or extent of disease, or of the remedial agents necessary for its removal.

Every operation in dentistry should be thoro. We should never begin any work without a determination to complete it. Work well done is twice done. We are too much disposed to slight work because at first sight it seems not to be important. Neglect of details ofn leads to great troubles. Who has not lost a filling by failing to trim away, at some remote point, overlapping gold? Even tho trouble should fail to come of such indifferent work, such a course leads to habitual neglect, and we degenerate insensibly into bad operators.

In operative dentistry there is nothing which should receive a closer consideration than excavation, otherwise no excellent operation can be performed.

1st. *Trim the enamel well to the depth of all disintegrated dentin, and remove thoroly.* Sometimes the enamel on the grinding surfaces of the bicuspid and molars is very hard, and even after they appear well excavated, there is a line of decay running between the enamel and dentin, and not unfrequently pockets of softened tooth under the edge of the enamel. Chisels are the best instruments for this purpose; but should the cavity be uniform in shape a bur is the best.

2d. *Do not leave fissures untoucht.* These are more frequently found on the grinding ends of the tooth, but ofn extend to the buccal or lingual surfaces. Tho small, they serve as inroads to undermine your filling. They should be thoroly rounded with a small drill at their extremities, and their walls cut perpendicularly, and sufficiently large to admit of good filling. To fill these indifferently would be as improper as to fill the main cavity imperfectly.

3d. Do only as much undercutting and dovetailing as will insure a good filling.

4th. *Trim especially well the cervical portion of the cavity.* The proximity of the teeth renders judicious excavation at such places exceedingly difficult; and ofn when the cavity is even with or below the gum, a constant discharge of blood exudes from the gum very much to our annoyance. The want of a firm basis on which to begin the filling would preclude the possibility of successful work, and if

again attacked with caries, would be the first point of exposure of the nerve, the patient having no knowledge of the decay till aking begins.

5th. *Trim the wall of the cavity as smooth as possible.* Close and thoro adjustment is the grand secret of success, and this cannot be done but by having the walls sufficiently smooth to admit of its close adaptation.

6th. In all cavities on the sides of the teeth, where there is the least danger of the walls breaking in by mastication, cut down thru the grinding surface, and fill all together. If this precaution is not observed, the tooth will by degrees be fractured, and leave the plug to become dislodged.

7th. Bevel the edge of every cavity at an angle of about forty-five degrees. This will frequently prevent shivering the edges in finishing a malleted filling, or from fracture from mastication when on the grinding surface of the teeth.

8th. Thoroly cut away all decay in all cavities, unless liable to expose the nerve. When decays are deep there may be only a thin lamina of bone or dentin over the nerve, and to cut thru would bring about a much more formidable difficulty. To thus leave the decay, and touch the surface with creosote will frequently do much toward hardening the structure. Teeth have been examined years after such treatment, and found much improved in solidity.

Perfect contact of the filling material with the walls of a cavity in all its parts, if the above prerequisites are observed, will in nearly every instance be a preventive of further decay.

THE DENTIST'S SIGHT.

PROF. J. TAFT, IN DENTAL REGISTER.

I recommended some years ago the employment of glasses by persons whose eyes had not begun to fail to relieve them of fatigue, occasioned by their fixedness on a small point. By the use of glasses, magnifying the objects on which the eye must rest, there is a much larger surface presented. But the objection occurred to me, that the convergence of the eyes might produce difficulties that would be equal to the advantage derived from this enlargement of the object, but I have not found it so. The convergence of the eyes to a certain extent will not injure the eyes. That is the principle given or the idea entertained, that if you use glasses you will shorten the vision, and the organ will get out of play; but I do not regard it as true, unless it is prest to a greater extent than it need be. It is true in regard to the blacksmith's arm, that he may by the use of the muscles of his arm increase its size and strength; but he may also exert the muscles to such an extent as to abuse them, and lose their strength, and the arm

become less than before. But up to a legitimate and proper point there may be a convergence of the eyes without difficulty or injury. When there is danger of any difficulty in this way, it may be known, for the eyes will complain, and cry out in such a manner that you will have to hear them. You will know it when there is a sense of pain with pressure, and fatigue of the eyes. It will easily be recognized, and ot always to be regarded.

In regard to changing from action to rest, from work to rest, from one condition to another, much might be said. A horse will get along very well up hill and down hill, better than to travel continuously on a level road; change seems to be necessary. This principle, as it applies to the eyes, is advisable. I have therefore resorted to it for the last few years. I have used glasses in such a way as to give frequent change to the eyes, changing the focus, and consequently changing the focus of the eyes, and some change as to the direction of the rays of light on the nerve distribution in the eyes, by using different glasses with a different focus, and I have derived considerable advantage in that way. I used two glasses, throwing them one over the other. Then after that it occurred to me, that perhaps a different arrangement might be made, so as to use a large magnifying glass over one eye, and not use the other at all. One of the eyes can be used with a strong magnifying glass without any apparent fatigue. On this principle watchmakers use the same lens for years and years,—a whole lifetime,—over one eye, without the eye suffering. To carry out this principle more fully, I got an idea some years ago of using two glasses, the upper one having a focal distance of about eighteen or twenty inches, and the lower one of nine or ten inches. These I use in operating, one placed on the other.

Thus you see I have three or four ranges of vision. I have the unassisted eye, by which I can see things on the table and about the room very distinctly, perhaps as well as I ever did. Coming to the operation I look thru the lower glasses. In some cases, when I want to see if the operation is going on all right, I will look thru the glasses thrown together; so I have here four grades of vision, and there seems to be that change from one grade of vision to the other that gives relief to the eyes, so that they do not suffer as they formerly did when I used but one glass. This arrangement I find more convenient, and my eyes suffer less than with any other arrangement I ever had. I would part with almost anything else I have about me, in the way of my arrangements and appliances, rather than these glasses.

Those who have seen Dr. Atkinson operate know that he uses two glasses. He was driven to it simply by necessity, and by his appreciation of the difficulties, and his understanding of what was needed.

OFFENSIVE BREATH.

DR. D. C. HAWXHURST.

One summer's evening, I walkt along a green lane strewn with apple blossoms. Approaching the door of my home, a low hum of voices fell on my ear; at the threshold I detected a sutle fetor in the air. Tho it was deep twilight I knew whom to salute when this odor presented itself.

A young lady acquaintance, markt by an unbearable breath, but distinguisht for her beauty, was making an evening call. A breath more execrable than hers I have seldom known to come from so beautiful a face, and a beautiful face more completely bereft of the legitimate attractions of beauty, thru the mere presence of something disgusting, I have seldom encountered in my life.

This young lady ultimately became my patient. It was my experience with her that spurd me more than any other single thing, to a study of the causes, and the conditions of fetid breath.

It is folly for the practitioner to underrate the influence which a bad breath may exert in driving his patients from him. Under my own observation several operators have suffered seriously from this cause.

The first feeling that comes into the mind on smelling a disagreeable odor is a desire to get away from it. The dentist whose breath is infected with odors that disgust, must not be surprised if his patients adopt speedy means of putting themselves at a safe distance from this infection. No other single influence can equal it in repelling those on whom he is to rely for his support.

I am acquainted with an intelligent and courteous operator who carries an offensive breath, and who has seen his patients drop away from him one by one, till at last he confines himself to the mechanical part of dentistry almost exclusively; nor do I know whether he is to this day aware how slight a cause has driven him from the operating chair.

The olfactory nerve becomes dulled to the impression of accustomed odors. Dentists do not perceive their own offensive emanations any more than other men. Shoemakers do not realize the odor of leather about their shops; grooms do not know how their clothes smell; the customer, and not the proprietor, is most alive to the odors about an apothecary shop; and the tobacco eater, enjoying his quid or pipe, is the only one who does not know what a sickening fetor tobacco adds to his breath. The truth is, no one detects the smell he is used to, and by consequence, since each is accustomed to his own breath, he will regard it as odorless, tho its vapors are loaded with a dozen different stench.

The dentist should never operate unless he knows that his breath is pure. He should keep his spittoon sweet; he should keep his rooms well supplied with oxygen; he should by changes of linen and bathing render his person offenseless; but above all he should exercise a constant watchfulness over his breath.

To pack gold for an hour and a half, and during the whole time breathe a stream of fetid odor directly into the face of the patient, is a gross insult. If an apology could ever make a bad matter better it should be made here. An apology is a poor indemnity, however, for the nervous prostration, physical exhaustion and nausea, that often result from breathing a foul breath.

Uncleaned finger nails and grimy hands will not cause disgust so strong, nor give offense so deep, as the breathing of disagreeable odors. If neglected hands offend the sight, the patient may withhold his glances; against a bad breath he can make no defense during protracted operations, and the dose becomes doubly disgusting from excess.

To diagnose his own breath should be one of the operator's daily duties. It will not do for him to assume that it is sweet to-day, because it was sweet yesterday. The animal organism undergoes ceaseless change, and the exhalations vary continually. The breath does not therefore preserve an unchangeable composition. During great vicissitudes of emotional and nutritive states, it may present different odors, sweet or foul, at each half hour of the day; specially after a meal of food that is highly carbonaceous, or rich in the essential oils, is there likely to be a change in the breath.

When the practitioner has ascertained that his breath is in a state that must unfit him to appear before his patient, at least for the present, it becomes his first duty to trace the vitiating odor to its cause. Whatever vile thing it may be, he will make little progress in removing it, till he discovers its source. This will be found in the mouth, nose, throat, or chest.

Neglected teeth are nearly always offensive. Various alimentary substances find a lodgment in the interstices about the mouth and teeth, and unless removed in time to prevent fermentive changes, are certain to present putrefactive compounds to the currents of air as they pass and repass in talking.

The obvious significance of this is that the operator should often look a little after the condition of his mouth; he should daily cleanse and polish the labial, lingual, proximal and grinding surfaces of each of his teeth; if necessary he should brush off deposits on the mucous membrane. There should be no carious teeth, no neglected roots, no calcareous deposits in the mouth of the dental practitioner.

At intervals we find men in our profession who chew or smoke tobacco. I am convinced that the "coming dentist" will not use tobacco any more than he will use asafetida. The odor rising from tobacco, specially from a pipe or cigar, is penetrating, and often clings obstinately to the teeth and oral surfaces after a second or third brushing; and there is a sickening fetor about it after an hour or more has elapsed, which is not observed immediately after indulging in it. The mustache, beard, hair, skin and clothing, condense it on their surfaces, and confine it in their meshes.

The warm air of a room, or the heat from a stove, may volatilize, and render sensible, remaining traces of this odor, even after what was regarded as a careful cleansing. The practitioner who has smoked a cigar can not be put through the requisite processes of purification, —bathing, fumigation and disinfection,—in any such manner as will make it permissible for him to enter the presence of a patient of refined sensibilities, short of several hours of conscientious and pains-taking labor.

The breath of a chewer has peculiarities of its own; it is rank and strong; it is different from every other smell; it holds its fetor long after the quid has been cast away, and the mouth thoroughly rinsed. I have seen a practitioner apologize for his quid, throw it out, rinse his mouth, and resume his work. It is to be hoped that no dentist will hereafter make so forlorn an effort to be agreeable to his patient. It is doubtful whether the offensiveness of the breath was very much modified by the removal of the tobacco.

The mucous membranes, glands, and parts about the mouth and throat, absorb the drug, and give off its odors, while the blood itself will for a time continue to throw out thru the lungs portions that have been introduced into the circulation by capillary absorption.

Tobacco is neither food nor medicine, and may be entirely abstained from without detriment to the health; nor can a professional man be regarded as out of fashion because he does not chew or smoke. The purest people in the best circles of society do not use tobacco.

In the fauces there sometimes occur little nodular bodies, made of cheese-like matter, which constitutes the source of a peculiar fetor. A nasal douche syringe may aid in their removal. Snuffing water thru the nose will often dislodge them. In some cases it will be necessary to gargle the throat, and throw water upward into the nose, or snuff it backward thru the nostrils and over the schneiderian membrane. If there is catar, some disinfectant may be employed with the syringe to apply it. All those parts over which the currents of air sweep, on their way to and from the lungs, should be rendered clean and odorless. Before the practitioner may approach his patient he must assure

himself of this. After all else has been done that can be, a few minutes breathing of pure cold air will complete the purification. The atmosphere is one of nature's best deodorizers. Appropriate and discriminating attentions of this kind will often conquer a most obstinate breath.

The practitioner who would rid himself of an offensive breath, will first examine and purify all those parts that lie above the larynx. Four-fifths of all cases will thus be cured, or very much alleviated. Their management is not generally difficult. A frequent repetition of the cleansing process is often necessary, especially if the membranes of the throat or nose, the bones of the face, or the maxillary sinuses, are the seat of chronic disease.

The damaging effect which these affections occasionally exert on the breath is immense. Such diseases, unless susceptible of complete and permanent cure, must be regarded as serious impediments to the practice of dentistry, since it is rare in the extreme that any one who suffers from them can be induced to exercise the care and attention requisite to preserve the breath sweet.

Bad breath from these sources is of comparatively easy diagnosis. None of the parts are deep-seated, nor very difficult of examination. Cases will often occur, however, in which all parts above the larynx seem to be in health, and the source of the offending odor can be traced to the lungs. To fix with certainty on the exact cause, will often require the skilful diagnostician to summon all his resources; and in their cure he will meet with peculiar and embarrassing difficulties.

In offensive breath originating in the lungs, we have not a local source of foul odor to which we may apply a purifying agent. The impurity exists in the blood, and permeates every tissue of the organism; it communicates an odor to the skin; it impregnates about twenty-five pounds of circulating fluid. An ounce of blood drawn from the veins will, in such a case, offend like the breath itself. In thus smelling the odor in the blood, instead of in the breath, we are only taking it directly, and at first hand. It is but the work of a moment for it to escape from the blood into the air passages, and manifest itself as a morbid agent in an offensive breath.

If the practitioner of dentistry shall discover that his breath is foul from an impure blood, he must no longer work at the chair till he is recovered; he must, himself, for a time, play the role of patient.

The treatment may include all the legitimate means of blood purification. The functions of excretion should be encouraged to the point of free activity; it is more than likely one is sluggish, and does not withdraw the requisite waste and foul matter from the system.

The diet, too, should receive attention. Pure foods in moderate quantity furnish very little material out of which a bad breath can be made. Known polluters of the breath, such as beer, wine, sourkrout, and hard cider, may easily be entirely avoided.—*Dental Register*.

DENTAL EDUCATION.

PROF. JAMES S. KNAPP, NEW ORLEANS.

My experience has taut me that those who have become most proficient and accomplisht as dental surgeons are those who not only had, previous to commencing the study of dentistry, a good common school education, but who had some knowledge of Latin and Greek, and who had received one year or more of private instruction in the office and laboratory of some good operator; and who besides these advantages posset a *natural fitness* in being *able to use their hands*.

I mean persons who posset that manipulative power which is essential in all operations embraced in the entire line of dentistry both mechanical and operative in their different phases and departments.

Taking these premises to be correct—and I feel sure they will be verified as such by all good operators—I would advise that no student be received into any Dental College till he can show evidence of a fair education in the branches taut in our common schools, and of his having been under some good dental operator at least for one year, the most of which should have been devoted to *Mechanical Dentistry* and the reading of *Chemistry, Anatomy and Physiology*, and two of the best text books on dentistry, such as *Harris' Principles and Practice* and some work on *Mechanical Dentistry*.

It would be very easy for a qualified dean to determine on a short investigation if these acquisitions are present; and if not it is my opinion all such applicants should be rejected.

In the eight years I served as dean in the New Orleans Dental College I brot blame on myself from some others of the faculty with which I was connected by discouraging some applicants I foresaw would never become accomplisht and worthy members of the profession to which they aspired.

Their letters before presenting themselves and their revelations on having a personal interview were sufficient grounds for me to give them no encouragement that they ever could become good dental operators. Indeed, their letters alone were ofn sufficient to induce me to reject them, always returning a polite but plain answer with what seemed good advice.—*Archives*.

Iron rust is removed by salt mixed with lemon juice.

BRIDGE WORK, FROM THE STANDPOINT OF A WEARER.

DR. I. S. KULP.

Too much theorizing and philosophising is often indulged in by professional writers on practical subjects, and not enough of the inquiring phase, "What do the patients think of it?" Those who have it to bear are good witnesses either for or against any new modes or remedies introduced, and it is often quite as instructive to get at this testimony as to write long denouncements or theoretical commendations. So it has occurred to me that perhaps the attitude of a patient would aid us in arriving at the merits or demerits of the much discussed "Bridge Work," as if I took any other mode of handling the subject. While a medical student some thirty years ago I had the misfortune of losing a molar, second bicuspid and cuspid on the left upper side, the loss of which switched me off into the dental specialty. From that time till within two years I have had made more than a score of artificial appliances with teeth attached, but none came near supplying their place; all had faults too numerous to mention. To complete my dilemma, about two years ago I lost my first lower molar on the opposite side. I now lost the power of mastication to a very uncomfortable degree. In fact, I never before realized the value of good molars, and now a new difficulty rose. I found my incisors and remaining cuspids were wearing off by mechanical abrasion, all of which were quite alarming to me. I had no hope of arresting the latter difficulty by the use of plates, as usually made. I was now determined to find something that would save me from impending indigestion and total dental wreck.

I had occasion to advise a patient to try the "Bridge Work" some three or four years previous, and found it was giving great satisfaction, and on very close examination of the teeth captured and banded, I found them in very good condition. Finding this case so satisfactory to my friend and patient, I determined to see what "Bridge Work" could do for me. I therefore applied to the inventor, Dr. J. E. Low, of Chicago, himself. I placed myself under his care, determined to submit to anything he might see fit to subject me to (as all good patients should). I of course had many questions to ask, and often silently protested to his manner of handling teeth to be captured and banded, but was in for it, and determined to bear it all in a spirit of martyrdom, as I was being made a sacrifice for a new idea, as I thought. The first attempt was simply a bridge supplying the lost cuspid and molar. This, of course, did not obviate the mechanical abrasion referred to. After wearing it for some six months I learnt to prize it above any appliance I had ever worn. My confidence in it was thoroughly awakened. I now determined to get all there was in it, so I visited the gentleman again and suggested the supplying of the lost

molar on the right side, and the capping the teeth with heavy gold, so as to prevent the mechanical abrasion of the front teeth. This was determined on, and the old bridge must of course be removed to make the proper changes it required to conform with the new plans adopted. In this operation of removal I had occasion to know how tightly the bands fitted, and how well the cement under them hardened. My fears of disintegration of enamel and dentin under bands and caps entirely vanished with the operation of removing this bridge, even after the caps were off, the cement could scarcely be removed from the teeth. The same conditions I have since seen after the bands had been on for years, instead of only six months as in my case. The cases were finally completed as determined on and placed in position as it now is. I had the second molar and second bi-cuspid on the right side capt with gold and a molar tooth attacht to these caps. On the opposite side above I had the first bi-cuspid half capt and half banded, *i. e.*, the buccal cusp was exposed while all the others were covered with gold; also the second molar capt with heavy gold plate; a molar was attacht to the molar cap and the bi-cuspid band, and to the other side of the bi-cuspid band was fastened a cuspid. Not being able to antagonize my front teeth, it seemed very much in my way, and became exceedingly tiresome, but in a few weeks I became accustomed to it, and to-day my front teeth again meet, but do not abrade as before, while my ability to masticate *anything is perfectly restored*. I do not experience the slightest difficulty in masticating even prairie beefsteak, and as to the appliance being in my way in speaking, it is simply a natural condition restored. I have in no way any of the difficulties I experienced with all the other appliances I had previously worn. I am not conscious of their presence. As to cleaning I am conscious that they are much more easily cleaned than so many natural teeth, and as to destruction of dental tissue under or round the bands and caps, I am not conscious of it, if there is any such condition.

I do not realize one of the objections so far made by the opponents of "Bridge Work" (except that it is patented). On the contrary I realize it to be one of the grandest triumphs of artificial dentistry. It stands in the same relationship to partial dentures that "Continuous Gum Work" and gold plates do to full dentures, except that if "Bridge Work" and artificial crown work is generally adopted, in the course of time full dentures will be few.

So much from the standpoint of a patient. I will speak from a professional standpoint. Recently I had the pleasure of seeing a piece of bridge work made two years ago for a 74 year old patient. I found it in perfect condition, giving great satisfaction. The four loose teeth the

lower bridge was attacht to have become firm and solid, giving him no trouble when biting very hard. During the past year I have many of all sorts of cases, from one to ten teeth attacht. So far I have realized no failures, all have and are giving satisfaction to my patients. I expect to be obliged to recement some of the cases, as I know of no cement that is entirely reliable. In some mouths it lasts well, but in the majority of cases it does not remain long in good condition. I therefore expect to have some trouble with cases coming loose, but if I should, it would not indicate a failure of bridge work. In my own case, if I had to submit to having it recemented once a month, I would still think it a blessing, incomparably great, to wearing a plate of *any kind*. I am assured, however, by those who have used this kind of work the longest, that if bands and caps fit accurately there is not much danger of their coming loose.

In making this work we must use good judgment to know when it will be useful, and how much to promise for it. In planning and working it, we need skill and careful manipulation. In my judgment, it requires the highest order of manipulative skill of any operation in the whole role of dentistry. There is no danger of degradation of mechanical dentistry here. A bungler or thirty-day dentist will not spend much time with bridge work. I see no reason for douting that when it becomes generally understood by the better classes of our profession, and the kicking against the "patent" pricks ceases, it will do more toward bringing the dental laboratory back to the old mourned for days, when it required skilful men to be mechanical dentists, than anything before the profession to-day. The cry to the dental profession from suffering humanity will soon be bridge work for partial and "continuous gum work," and gold plates, with teeth attacht by rubber, for full dentures; and the sooner we get ourselves in readiness for it the better for us and our patrons. We have no time for tirading against the few, who by their inventive genius and perseverance discovered new things, or brot to perfection old principles, and have gotten for their own protection patents on their inventions; let them have the remuneration they deserve, for if it is not good and useful we do not want it, but if it is what is needed for the public good we will be compelled to use it, and why not pay the inventor for his discovery? "Bridge work," as covered by letters patent to-day, was never made before by any one. Even tho it had been, the man who brot it before the profession to-day in its great perfection deserves all the emoluments he can get from his patent, for a blessing is in it for our unfortunate patients, and we have no right to withhold it from them. Prejudice and jealousy are very great enemies to progress. All new things in every line of improvement are attacked by them. It is quite natural

that it should be so in our own beloved profession, for many of us have been in it for many years, and we do not like to be dictated to, very much, or be disturbed in our old ways of thinking or treating professional subjects. And if we should, by perseverance and indomitable will, go beyond the lines laid down by law and get out a patent, or advertise beyond the limits prescribed to us, it is quite natural that the cry of "down with him and his humbug" should be heard on all sides, and that the thin skinned should tremble in his boots. One who has courage to take a position in the advance guard must expect such treatment. But for the really worthy, time regulates these things to their honor and glory.—*Iowa Trans.*

Cocain.—Dr. F. Y. Clark says: I have seen several newspaper articles condemnatory of cocain. I was one of the first manufacturers of cocain in this city. I have no financial interest in it now, I have used it and am using it extensively. I have been anxious to learn of any well-authenticated case where it has acted injurious under judicious use. I have employed cocain in over five hundred cases, and I have found that wherever it is used as a local application to the mucous membrane with proper care it is perfectly safe. As to these articles in the papers, my knowledge of the manufacture of cocain convinces me that it cannot be manufactured in this country at a less cost than seven cents a grain. The leaves are now selling for sixty cents a pound. I have interviewed many physicians as well as dentists in regard to the effects of cocain, and the testimony is all one way; and, so far as my experience and investigations have gone, the verdict must be that it is safe and harmless when judiciously used. If there is any adverse case I should like to know of it. It is a common thing among the soldiers of Peru and Guatemala to carry, when on the march, a little bag of coca leaves, which, if they are wounded, they chew in the mouth and apply to the wound. That has been their custom for over one hundred years. The leaves act as an antiseptic. In Guatemala, Peru, and other South American States, coca leaves are chewed as commonly as tobacco is chewed in the South, and we have yet to hear of its bad effects.—*Cosmos.*

Adentus.—Miss D——, of this city, age twenty-five, called at my office to have me make her a set of teeth. The most interesting feature in this case is in the fact of her never having a natural tooth. She is below medium size, has generally had good health. The only trouble is that she can not hear very well. There is no mal-formation about the mouth. It presents the appearance of having had teeth extracted about six months before. I used the smallest size teeth I could get, and left from each plate two molars. She was but a short time in making satisfactory use of them. I imagine it will be a long time before I see a similar case. Is it the first one recorded, or am I in the dark?

J. C. HENRY, M. D.

GOLD LINED RUBBER PLATES.

JAMES B. HODGKIN, D.D.S.

The dental profession may well be proud that within the last forty years, and particularly the last two decades, dentistry has made wonderful progress studying the structures of the oral cavity. But, while this is true of the treatment of the teeth it cannot be as truly said of prosthetics. In special directions, as in crown and bridge work much has been accomplished. But in mechanical dentistry generally the profession has yielded too much to the demand for cheap dentures, without proper regard to natural appearance or the health of the wearer. Thus, while gold, platina, porcelain, and some alloys, offer the cleanest and safest materials, hard rubber has largely superseded these and all other substances as a base for artificial teeth. Its general use, according to many prominent dentists, has produced a disease which is rarely known where these other substances are worn. So true is this that it is generally called the "rubber disease" or "rubber sore mouth." The effects of this disease have been frequently described in the dental journals. Commencing with irritation of the mucous membrane and sometimes extending to the destruction of this and of the underlying muscles, it has been known to produce necrosis of the hard palate. The fact that it is hardly ever accompanied by pain prevents a knowledge of its existence except by the observation of the dentist.

Dr. Kulp reported to the American Dental Association that he and some of his professional friends had examined 1100 cases in which rubber plates were worn and found this disease existing in three-fourths of them. Dr. W. H. Dorrance, to the same body, says he had examined 211 cases, 165 rubber and 46 celluloid plates and found the disease in an aggravated form in 47 per cent, in a marked form in 44 per cent, and no effect in the remaining 9 per cent.

Dr. Walker of New Orleans said to the Southern Dental Association that on account of this disease, he had called in all his rubber plates for exchange and that for many years not a day past he did not see well defined cases of the specific rubber disease in some form, its manifestations being as varied as those of the old-fashioned liver complaint.

On account of these facts and others coming under their own observation, such eminent men in our profession as Drs. Taft, Atkinson, Chase, Watts, Walker, Cutter, Allen, Eames, Cushing, Morrison, Crouse, and many others have urged the abandonment of the use of rubber as a plate for artificial teeth, but all such efforts have failed; and, on account of its cheapness and ease of manipulation, it still holds the field.

As the use of rubber for dental plates cannot be stopt, can its effects be prevented?

Dr. Walker of New Orleans, Dr. Sturgiss of Quincy, Ill., and others, found that some patients with this disease would not discard their well fitting rubber plates, but by covering the palatin surfaces with gold or tin foil they effected a cure. But this was only temporary on account of their inability to fasten the foil permanently to the plate; it would soon come off, and the disease would return.

There are now advertised three linings for rubber plates, which it is claimed adhere permanently to the rubber, and thus meet this difficulty.

The one of these that I have examined is composed entirely of pure gold, and every effort I made failed to separate it from the rubber. I could only get it off by scraping and then the two still stuck together in the fragments scraped off. I thus again call attention to an evil so often before pointed out and suggest that every dentist line his new rubber plates with gold, and do the same with all old plates when symptoms of this disease appear.

VULCANIZABLE GOLD.

A. BERRY, D. D. S.

The "Sole Agent" says, "By the use of this gold all objections to rubber as a base for artificial teeth are obviated, as it prevents all irritation and poisoning of the tissues of the mouth, and makes a beautiful plate, and one that is easily kept clean."

Unfortunately for the "Sole Agent," his charges that rubber plates irritate and poison the tissues of the mouth, are not proven, if they were, rubber as a base for teeth should be abandoned, and the millions of people using it should be warned of their great peril and urged to procure substitutes for their poisonous rubber plates; and all honest dealers in dental materials would, of course, refuse to be *particeps criminis* by selling the poison to unscrupulous dentists, unless the inherent evils of it are to be "obviated" by the gold lining.

But another inducement to use vulcanizable gold is held out by the "Sole Agent": "Dentists can readily obtain from \$10 to \$20 extra for a set of teeth lined with this gold." Then comes the inevitable "Indorsements": "I consider it a good thing." "No dout it makes a great advance." "Am satisfied it is a good thing." "Can heartily recommend it to all." "I readily get \$10 extra for Gold Lined Plates."

The "Sole Agent" does not inform us by what means a gold lining about the thickness of No. 30 foil "obviates" these fabulous evils from the poison of rubber. Are not properly fitted plates of gold, silver, aluminum, celluloid, rubber, Watts metal, and other alloys, equally free from causing injury to the tissues of the mouth?

The beautiful gold lined plate makes the uncovered rubber look worse than otherwise from contrast. But if the patient thinks his plate prettier from the gold on it he gets small remuneration for the "\$10 to \$20 extra." Of course, his dentist will caution him as to employing friction with his tooth brush in cleansing, lest he wear away the soft gold, and the last end of his beautiful plate be worse than the first—liable to produce the disasters attributed to rubber by the "Sole Agent."

Are not the claims of the benefit of gold lined plates spurious; and when advanced to induce their adoption are they not an imposition on the credulity of the patron, and resorted to mainly on account of the \$10 to \$20 extra?

Gold Lined Rubber Plates.—I dissolve pink rubber in chloroform, and, after packing the flask in the usual manner for a rubber denture, I bring the sections of the flask almost together, separate and remove the cloth from the rubber (a piece of the cloth found with the rubber) interspersed between the rubber and cast, to prevent its adhesion. Now take a sheet of gold foil, of the number desired, (depending largely on the price charged for the work) cut a pattern for a lining and burnish it down well on the cast, which has previously been touched here and there very slightly with shellac varnish, to keep the gold in place. Then wash the palatin surface of the rubber with the solution of pink rubber, it should be a little thicker than mucilage: use dry heat to close the flask. I find the gold adheres with greater tenacity when put on in this way. In mouths where such plates are worn there is less sponginess of gums, less redness, tenderness, and inflammation of the mucous membrane.

Both lingual and palatin surfaces may be covered with gold, and when done, present a very neat, cleanly appearance. Patients appreciate such work, and are willing to pay the extra cost involved in its construction.—*S. W. Lakin, in Ohio Jour.*

WAS IT THE EFFECT OF COCAIN?

A lady patient about 20 years of age, requested me to use cocain, I injected with my syring 8 m, and in 5 minutes she remarkt "I shall go into hysterics," and in two minutes more she was breathing with difficulty. She continued to complain of a strange feeling in her arms and legs, and gave a perfect shower of talk all the time. In 30 minutes I called in a physician who staid half an hour when she became conscious, but was very weak. The doctor thot it was hysteria.

I should like to hear from others.

Hillsborough Bridge, N. H.

C. E. FARNUM.

AMALGAM.

Dr. J. C. McCulloch, in Louisiana Dental Society spoke of the bitter war waged during its infancy against the advocates of amalgam, so bitter indeed that many operators felt themselves forced to abandon its use to maintain their standing in the profession. Many of its once bitterest opponents, however, men who now stand among the representative men of the profession, are now its champions. He said, in substance, that while in the hands of the charlatan and the quack it may be used to deceive and impose on a confiding public from the ease with which it is manipulated with apparent success by men who have not the skill required to produce good results with gold, nevertheless even the best operators find cavities so located that nothing else can be employed, teeth of a character that no other material will save; and patients whose means will not permit expensive operations in gold. He referred to a recent article published in the *Southern Dental Journal* from the pen of Dr. G. Chisholm, of Columbus, Miss., in which cases of rheumatism, salivation, etc., are attributed to the mercury in amalgam fillings, tho not a fact or even a theory is offered to show how or why the amalgam fillings are responsible for the trouble. The essayist humorously suggests that possibly the warm weather caused the mercury to be vaporized, and thus be taken into the system. He also points out the inconsistency of the writer of the article referred to in that, while not doubting that the amalgam fillings were really the cause of all the suffering, the rheumatic pains, salivations, cysts, etc., and otherwise detrimental to health, he nevertheless "fully realizes the merits of amalgam as a filling material."

Amalgam, while allowed no favor, has forced its own way, proved its own virtues, and gained ground steadily, till it now stands second to none when used with judgment and in its proper place. He referred to the statement made in the paper before mentioned—that "amalgam was not expected to preserve teeth a great while," claiming the contrary to be the fact, as proved by the records of our older operators who, years ago, filled teeth with amalgam, which are doing good service to-day. If the amalgam they used preserved the teeth, surely the improved amalgams of to-day will do even more. He also spoke of its great value in the recent methods of use for attaching facial crowns to the remaining roots of natural teeth, by which means hundreds of otherwise useless roots are made to serve a good purpose.

As a means of saving the teeth of the poorer classes, its unrivaled value must be admitted, and this class of sufferers certainly require our sympathy and assistance quite as much as our more wealthy patients. Without amalgam we should see them suffer and hear them cry for aid in vain. If only for them, amalgam is the greatest boon given to dentistry.—*Dental Register*.

ABSORPTION OF THE SOCKETS OF THE TEETH AND THEIR TREATMENT.

DR. WILLIAM MERRILL.

That there have been many teeth extracted, simply because they were loose and, perhaps, irritating, and which could have been saved for years of usefulness, there can be no doubt.

We may assume that nearly one-half of our patients have a deposit of lime lodged about the necks of their teeth. It may be but a small accumulation of only salivary calculus, but finally involving the very roots by the accumulation of the more serious sanguinary variety. In the latter case, of course, the alveolar process has receded as far as the deposit extends. Ulceration may continue till the teeth become so loose that their loss is inevitable.

Teeth that have become loose from sanguinary calculus, causing necrosis of the alveolar process, can only be benefited by the most thorough cleaning and removal of the dead bone. Experience is about the only teacher by which we can learn to discriminate between live and dead bone.

With a sharp-pointed instrument we will be able to distinguish by a certain corky feeling of the live, from the harsh gritty feeling of the dead tissue and tartar. Removing the calculus and dead bone thoroughly with a set of Dr. Riggs's instruments and such other as the skilful operator will be able to make, and keeping it removed is all that is necessary in most cases. When I say thoroughly, I do not mean anything else.

A solution of sulphuric acid applied to the edges of the live bone by means of a syringe (Dr. Farrars' alveolar abscess syringe is the best) is useful, but not always essential. Creosote, nitrate of silver, and tannin, have been used advantageously in some cases.

I will mention one case which came under my notice three years ago, in which the teeth were so loose that an appointment was made for their extraction. But I tried to save them, and, tho they were so loose they had to be ligated to the cuspids (they were four inferior incisors) by attaching a platina plate to them, and fastening each tooth to this plate, that they could be properly cleaned, it proved successful, and they are in good condition to-day.

Varied successes have attended my efforts since then in the treatment of loosened teeth; nearly all however, have been beneficial. Some have failed, more from the lack of cleanliness and attention on the part of patients, than other causes. I think care, patience, and a good degree of skill is requisit to save such teeth.

Having cleaned and treated teeth and put them in condition for usefulness, it is very essential that they be kept clean.

Imported white castile soap is nearly tasteless, and rubbing the

wet tooth-brush over a piece of this soap before dipping into the dentifrice gives us the most perfect combination for thoroly cleaning the teeth.

RECENT PROGRESS IN DENTISTRY.

Under this head W. H. Rollins, in the *Boston Medical and Surgical Journal*, has, among other things, the following :

PREPARING FOR THE ERUPTION OF THE FIRST PERMANENT MOLARS.

These teeth usually erupt when a child is six years old. They almost always decay, either during eruption, or shortly after. Till the eruption of the bicuspid, five years later, the anterior surfaces of these teeth are in contact with the first, or temporary molars. It is a well-established fact, that contact between teeth will result in decay in most mouths. As the temporary molars are to remain in the mouth for a few years only, there is no objection to so cutting away the posterior surfaces of these teeth, so as to give as small a contact as possible between them and the first permanent molars. A dentist should always see a child shortly after the age of five years, that this treatment may be carried out before the permanent teeth erupt, because after this, it is difficult to properly do the extensive cutting without injury to the permanent tooth, whose enamel is always at first soft. If it were possible to grind away the backs of the temporary molars, and thus prevent the permanent ones from ever touching them, the danger of decay would be slight, but there is a peculiar tendency in teeth, which has not been properly explained, or, so far as I am aware, noticed ; this is the tendency which they show to move toward the front of the mouth. It is due to this tendency, that it is not practical, in most cases, to maintain perfectly free spaces in the positions named.

The best one can do, is to grind the backs of the temporary molars, so that they shall only touch the permanent teeth at small points near the grinding surfaces, for here, contact will do the least harm : first, because the enamel is strongest there ; and second, because, if decay should begin, it can be more easily managed than at any other point on the proximal surfaces. Without a figure, it is not easy to explain the shape this preventive trimming should make the teeth.

CHRONIC TYALOREA OF THE GLANDS OF THE ORAL MUCOSA.—From *Denial Record*.

This disease has not been clearly recognized, tho to the effects which it produces on the teeth several names have been given, beginning with John Hunter, who mistook one of its symptoms for a distinct disease to which he gave the name "decay by denudation." This name is still in use, and more recent writers have farther withdrawn

attention from the real disease by giving the names "surface wear," "erosion," "denuding," "chemical abrasion," to its effects on the teeth.

The only treatment which the writers who have used these names have suggested, has been either to do nothing, or, when the effects on the teeth have been extensive to fill the cavities with gold.

Tyalorea shows itself chiefly in an increase in the amount of the secretion of the acinous glands of the lips and cheeks. Accompanying this increase in amount is an increased viscosity and slight acidity. Even in those cases where the effect on the teeth is rapid there is seldom a marked acid reaction in the secretion. This faint acidity explains why the grooves in the teeth almost always are smooth, as if polished; many writers mistaking the real cause of the trouble, have attributed the grooving of the teeth to the effects of a stiff brush in cleaning them.

There are cases where caries supplements tyalorea in which the starting point of the caries is caused by the intensity of the tyalorea, the evidently softened tooth substance not being removed as rapidly as formed; thus affording a culture ground for germs to produce caries. These cases are chiefly those of the channeled form, in which the effects on the teeth consist of grooves across the teeth near the necks.

Tyalorea is an entirely distinct disease from caries. In most cases it is a local expression of some ill-defined constitutional condition. In others it is sharply local. Its effect on the teeth is seen in at least three forms: in a general wasting away of the teeth; in transverse channeling of the teeth at their necks; and by the formation of saucer-shaped cavities on the labial surfaces of the teeth. This last form attacks the canine teeth often before any others. This fact, with another, that pulpless teeth are as much affected as those having living pulps, tend to show that the effects on the teeth are not caused as has been suggested, to a retrograde metamorphosis in which the wasting of the teeth is produced by an absorption of the lime salts caused by a new cellular growth. In one of these cases there is no living tissue from which the cells could come, while on the other hand it is not likely that if this were the true explanation the canine tooth which is the strongest tooth would be attacked first. Where cup or saucer shaped cavities are formed on prominent portions of the labial surfaces it is often easy to see the effect of the glandular congestion; the orifices on the mucous membrane occupying the centers of little raised papillæ of a deep red color. If the surface of the membrane is dried, only a few seconds will elapse before it is studded with little pearls of secretion, acid to litmus paper. In an ordinary condition of these glands a minute or more would elapse before any secretion would be observed, nor would the reaction ever be acid except perhaps early in the morning. It is an open

question whether the action of the parotid secretion and also that of these glands may not be normally acid for a short time before rising ; whether this transient acidity is due to the same acids that are present in the pathological conditions named is not known. In treatment, where the disease is simply a local manifestation of an undetermined constitutional condition, we can give alkalies as these at least diminish the local effects on the teeth, tho this treatment may be only palliative.

In those cases where the disease is evidently caused by an overworkt condition of the patient, as is frequent in nervous children, these alkalies are of great value, as they improve the condition of the digestion. Many cases of tyalorea of this kind have been cured in a few months by this treatment. In other cases where gout is responsible for the trouble this treatment is also of great value.

Local Treatment. This should consist of the daily use of astrigent and alkaalin mouth washes. Where the disease is evidently local and confined to a few glands these may be partly broken up by tattooing, or the use of electrolysis may be suggested.

TO HAVE DENTISTRY APPRECIATED.

DR. F. S. WHITSLAR, OF LOUISIANA.

The subject involves much ground. There are negative and affirmative sides to present. In considering the negative side, we introduce two classes, the extremes on that side of our subject. The first class of these extremes is made up of persons who entered the profession because they thot it an easy and genteel life to live,—ignorant, and too lazy to inform themselves. They have presumed enuf on the ignorance of the public to palm off their impudence for wisdom and ability. Their pretensions are spread broadcast by the newspapers ; pretentions that shut them out from the society of the respectable portion of the profession.

The other class is made of those who fancy they have no equals ; who arrogate what they do not possess, and assume positions they cannot maintain,—men who express opinions and give advice without knowledge of facts. They seek to rench money from the pockets of honest people. They strive to weaken the minds of people in regard to other dentists, point out defects, insinuate that the non-payment of the bill would be the proper course ; suggest some alteration, or perchance a lawsuit. These pretenders are found everywhere. They count themselves sufficient for all they may utter, or any position they may occupy. These two classes of our profession, though seemingly so widely separated, are actuated by the same spirit, differing only in this : That the narrow conception of the one prompts him to promise everything for nothing ; while the impudence and avarice of the other

demand for nothing, everything. These, with the go-betweens constitute the millstones that hang on the neck of the profession, and tend to pull it down to the level of their own dishonesty, and as a result, destroy appreciation of dental services. This is one side of the subject.

In answering the subject affirmatively ! The key note was struck when the American Society of Dental Surgeons held their first meeting, forty-one years ago, and declared, in the first article of their constitution, that it was their object to advance the science of dentistry by free interchange of sentiments, to give character and respectability to the profession, and to draw the line of distinction between the meritorious and such as riot in the ill-gotten fruits of impudence and empiricism.

A thoro medical education, preceded by a good course of mental disciplin and literary requirements, must henceforward be regarded as the basis of our superstructure.

Dental surgery rests on the same general principles, and is governed by the same laws that govern general surgery, hence, the same course of study is demanded in the one as in the other. If the surgeon is a physician, a doctor, so is the dentist, the aurist, the oculist, for all are specialists in medicin.

Our relations to our patients are intimate, delicate, confiding in their character, and must be preserved inviolable and intact. We cannot be too particular in what occurs in the presence of patients. The dentist must be an honest, faithful, polite, intelligent, and courteous man. He should be a christian gentleman. He must be on his guard that as few mistakes as possible occur ; and the least omission of duty, or the least neglect nearly always will result in failure. Let truth gild our conversation and the character of our operations.

Let us be true to ourselves, honest to our patients, just to our fellow practitioners, and labor in love for the good of the profession.—*Dental Register.*

DEAD TEETH.

DR. W. A. BRONSON.

There are so many elements of difference in cases, that no fixt rule can be made. Temperament, structure, physical condition, and all the thousand and one influences which constantly affect us, must influence treatment. So that what for the time being we may or may not do is a matter of judgment. What might safely and successfully be done at one time, at another time might create a disturbance fatal to the tooth. Teeth with devitalized pulps are constantly being presented and must be cared for. One case treated after a certain method

is successful, and the dentist flatters himself that he now knows all about the subject. The very next case will perhaps present unfortunate features, to his utter discomfiture. One condition should always be secured, direct and free access to pulp-canals. For instance, if the exposure is on the posterior proximal surface, and a double corner is to be turned, do not hesitate to go direct to the pulp-cavity thru some other part of the tooth. It is comparatively easy to supply the loss of tooth-structure with something more indestructible than tooth-substance itself.

I have in mind one interesting case of which I would like to speak. A second lower bicuspid, the pulp of which must have been dead some years, was treated by me pretty thoroly with iodoform, the pulp-canal having been washt with chloroform and warm water. It grew worse for a day or two; when acting on a hint from Dr. Atkinson, I applied carbolic crystals to the gum and cut it, making one slit perpendicular and the other transverse, and with a drill in the engine I went directly thro the process to the end of the root. The face was swollen a little the following day; but the tooth recovered sooner than any tooth I have treated that was equally diseased. I attribute that speedy recovery very largely to the free access I made through the gum.*

Whenever I open into a pulp-chamber which contains a putrescent pulp, I either dip the end of the drill in corrosive sublimate or saturate the cavity with the drug two grains to the ounce, at the moment the air enters.

The point which I would make would be the good effects resulting from the use of an antiseptic at the time the pulp-chamber is entered. Of all the methods for ascertaining whether the pulp of a tooth is dead or not, I think the best is the use of the electric light, which I find is almost infallible. There are several methods of treating teeth when periostitis exists. One of the most successful is to put on the rubber dam, cleanse the pulp-canal as thoroly as possible washing it with chloroform, and then apply hot air continually till the pain subsides. I am indebted to Dr. Bogue for this idea.

Perhaps the best filling for roots of teeth is oxychlorid of zinc; but it is not always desirable to use that. When I wish to avoid the possible escharotic effect of oxychlorid I use a mixture of zinc and creasote, made slightly plastic, so that it can be carried quite to the end of the root, then fill the main cavity so that the stopping can be readily taken out should occasion require it.—*Cosmos*.

* This is advantageous, even if it is only to get more directly at the abscess, and for the more free discharge of pus; but if the drill is so directed as to sever the abscess from the apex of the root, the cure is sure. If the artificial fistula is to remain as a permanent drain, its use is questionable—it is merely a make shift.—ED. ITEMS.

SHAPING PROXIMAL SURFACES.

J. S. FRANKLIN, M.D., D.D.S.

[Demonstrator of Operative Dentistry, Vanderbilt University.]

In the performance of some dental operations, teeth are often marred in beauty, comfort, and utility, and their ultimate preservation endangered. Suppose, for illustration, a patient desires decayed bicuspids filled. We first obtain space sufficient to perform the operation. If the decay is small before filing it will be smaller afterward. This hole is reamed out and filled with gold flush with the flat surface. A paper disk polishes the filling, and possibly rounds the sharper angles. The patient is dismissed. Now what have we done? Stopped the aching in a sensitive tooth, sent the person away believing the tooth to be in the best possible condition, and feeling certain all has been done that can be done. The first meal or bite of meat will warn the patient there is something wrong, every effort to masticate forces something on the gum and causes discomfort. A thread or tooth pick removes the offending substance, and ease is regained. In a few days, from an all-wise provision of nature, the teeth approach each other, and the space after a time is obliterated. Still food insinuates itself and cannot be removed, and remains there to the great annoyance of the patient. It decomposes causing offensive odors and vitiating the fluids of the mouth and breath of the patient, and the resulting acids wash out the lime salts of the tooth. Decay proceeds apace. The teeth are no longer in their normal relative positions in the jaw or to each other. The spaces at the necks are partially or wholly obliterated and the intervening gum absorbed by continued pressure between flat surfaces, the buccal and palatin ends of the festoon are continually irritated, enlarged and sensitive, bleeding from the slightest touch. From contiguity of structure peridontitis is frequently a concomitant. What have we done to the tooth? Suppose we take two ordinary round pencils, and with a drill make a hole in each, to represent decay; then place them side by side so that the holes will face and cover each other. The pencils touch now in a line thruout their length, and the holes are scarcely visible. To gain access we will take a file and cut away between the pencils which are supposed to be held in their relative positions during the filing. Now fill each hole with gold and allow the panels to approach as did the teeth, and two planes touch instead of two lines. Separate the pencils and examine these two planes having gold fillings. We find the black paint has been filed away and that red cedar surrounds the gold filling. The pencil has a flat side where it was intended to be round. The same takes place when a tooth is filed. We remove the enamel as we did the paint; and our filling has dentin for margins, a tissue more prone to decay,

when subjected to the influences and causes of decay, than hard enamel. All this gives to the tooth a shape and condition never intended by nature.

Nor is this all—if we examine a bicuspid we find it possesses two curves, longitudinal and transverse, and they touch in one point as would two spheres, and this point of contact is about midway of the crown. By our ruthless cut we destroy the two curves, bring the point of contact near the cervical margin, and bring two decided plane surfaces in juxtaposition. Such a condition I have never found in nature, unless abnormally so.

If we are dealing with extensive decay in the bicuspids, and remember the appearance of the teeth in incipient decay, we will observe that, as the line is washed out and the frail edges crumble, the teeth approach and telescope each other, thus materially changing their relative positions in the jaw, and to each other. At times the articulation is impaired.

We will observe that so long as the cutting face of enamel is intact, the orifice of decay is rather oblong than round, especially in short, thick crowns, and the long axis is the palato-buccal. This particular point I deem very important to the dentist. How many of us fail on bicuspids just at these points, and just as the leaving of flat surfaces in contact is indicative of failure. So will it be if we overlook this spreading tendency of decay and fail to adopt means that will keep these edges of enamel apart.—*Dental Headlight*.

Dr. Chalfant's Pardon.—Dr. C. writes: The paragraph which I have just read in relation to myself in the ITEMS OF INTEREST for the month of June, is far from the truth. My pardon *was not* "brought about chiefly by the ingenious persistency of a woman." If Mrs. Perkins is now to become Mrs. Chalfant, she is to marry a man with whom I am not acquainted.

The facts are these: I was pardoned just ten months and four days ago; and would have been released long before had it not been for the persistency of the "woman," who was so anxious to claim the credit of giving me my liberty. I escaped from the penitentiary once, more for the purpose of extricating myself from the "silken fetters of love" which the persistent widow was endeavoring to ensnare me with, than for getting away from the prison. Mrs. Perkins made my imprisonment the chief means of support for herself and mother. She collected several hundred dollars in addition to rents and favors that were extended her in various ways, on the ground of being my affianced wife—so believed. It is exceedingly disagreeable to me to see my name associated with hers in any way. Yours Respectfully,

San Francisco, Cal.

SAMUEL P. CHALFANT.

PRACTICAL HINTS.

Prepare borders of cavities smooth and true, and do not let gold overlap the surface.

In extracting teeth an outward pressure is an essential motion.

Crowned *roots* are far preferable to partial dentures.

Rubber plates vulcanized the desired thickness are far superior to a thick plate drest down.

To repair broken plaster models moisten each surface with water, apply very thin plaster and replace.

Remove artificial dentures during the night, if they cause irritation.

An air vacuum in an artificial plate is ofn objectionable.

Springville, Iowa.

GUSTAVUS NORTH, D. D. S.

Mending a Broken Tooth.—I have a patient who has but few superior front teeth, but on them depends mastication and the articulation of the jaws. The lateral incisor, by being pounded on in mastication for a long time, was ultimately broken off quite near the margin of the gum. I desired to save the pulp of the tooth, which was still alive, and also wisht to restore the masticating surface lost to the patient by the fracture. I therefore inserted two gold screws in the dentin, one on each side of the pulp-canal, and build a gold crown of crystal gold round them, the screws, combined with some little irregularities of the tooth itself, furnishing the means of security and attachment. That crown remained there fifteen years, being subjected to great mechanical attrition and abrasion, the marks of the antagonizing lower teeth being very apparent. Ultimately, because of this continual hammering, the crown broke off obliquely above the gum, the two screws which were located on either side of the pulp remaining in their places within the gold crown. The pulp having died from the effect of a very severe cold, I treated the root and placed on it what is now popularly known as the Richmond crown. It was not so called thirty odd years ago.—*W. H. Dwinelle.*

Hemorage; Turning a Tooth.—In JUNE ITEMS we gave this extract from a letter from Dr. Fred. Welch, of Syracuse: "To stop bleeding after extracting, I fill the cavities with tannin made into a thick paste with glycerin; over this I place warm gutta-percha to be bitten on and kept close."

The doctor now writes: I notice in your JUNE ITEMS a part of a letter I wrote you about a case of hemorage. You left out the 'cotton.' The success of my treatment was demonstrated last week after my assistant extracted an inferior bi-cuspid for a young man.

Several hours afterward he returned with blood flowing very profusely from the socket. My assistant plugged the cavity very thoroly with cotton saturated with chlorid of iron. The hemorage ceased, but the patient left only to return in the evening bleeding worse than before. I removed the compress, and after syringing the cavity with phenol sodique I packt it with cotton thoroly incorporated with tannin mixt to a thick paste with glycerin. The hemorage stopt immediately. The second day I removed the cotton without further trouble.

You also speak of that case of regulating you saw in my office: a lateral incisor turned so the mesial face was where the labial face should be. I gave the patient gas, and with my forcep loosened the tooth and turned it to place. The soreness was all out of the tooth in a few days and now (3 months since) the tooth is in perfect position, and alive.

SYRACUSE, N. Y.

FRED. W. WELCH.

Capping Pulp.—In 1875, when we were all talking about capping pulps, I had occasion to cap the pulp of a right superior first bicuspid. Three years later, the cement filling having worn down considerably, I removed it and examined the pulp to see what condition it was in. Removing the little paper I had used for a capping I could see the pulp alive, and I noticed that no deposition of any kind had taken place. I put back the same capping-paper, using a little shellac to keep it in position. In December, 1879, the lady came and said the tooth was aking quite badly. I removed the filling and refilled the tooth, which seemed to be all that was necessary. In November, 1881, the cement filling had worn down again, and, everything seeming to be quite comfortable, I filled over the bone, filling with amalgam. I saw nothing more of it till a few days ago, when the lady came in and said there was something wrong with the filling. I found it had bulged out, and seemed to be loose, and when I took it out for the purpose of refilling, the bone filling all came away with it. Examining the pulp I had capped in 1875, I found quite a deposit of brown secondary dentin. The pulp was nicely protected, so that it was not necessary to replace the paper, but simply a layer of cement, over which I placed an amalgam filling. When I cut a little to make the cavity deeper it was very sensitive, proving the pulp was as much alive as ever.

I have had many failures, as I believe most dentists have, but on the whole I have been well pleased with the results of my efforts.—*Dr. Wardwell, New York.*

One of the special charms of the features is a full set of sound teeth well cared for.

For Our Patients.

THREE GRACES—HEALTH, BEAUTY, COMFORT.

MRS. J. R. GREEN, EAST NASHVILLE, TENN.

I suppose people generally do not know the effect of good health on the teeth. I did not myself till a few years ago. I was truly surprised and delighted to find that our teeth may improve as we improve otherwise bodily. We have seemed to consider them as something apart from the rest of the body. This almost universal ignorance in regard to their *living* connection with our physical make-up is another proof of how poorly we educate our children. Beauty is something so charming, and exerts such a power that it is wonderful how little we really understand its true nature. Every girl knows that a fine, clear skin is one of the most exquisite adjuncts to beauty. Perhaps a few know that regular sleep, refined and delicate habits, and careful regard to eating will go far to secure this much-coveted prize. Good health is so valuable of itself that it is worth all the labor and care we can give to possess it. But when we add to it the potency of good looks it becomes a power in our lives. I tell my girls: "If you want to be pretty you must live with that view. Deny yourself such things as will injure the digestive organs; give the stomach the cleanest, most wholesome food, and study to find out your own special peculiarities in that line, and it will surely add to your beauty." I never saw a girl who did not wish to be beautiful, or a boy who did not wish to be strong. So I say to my boys: "If you want fine, strong muscles, splendid big bodies, and to be a man among men, live right every way. Of course there will be difficulties. Did you ever buy anything fine or rare for which you did not have to pay a correspondingly high price? Of course not."

Twelve or fourteen years ago I made up my mind I would be a healthy woman, God willing. The first thing I noticed was, my feet were almost always cold. It took me three years to remedy that. But I did it at last, in various ways—hot baths at night, cold in the morning, friction with a towel, and in fact any way and every way I could think of to set the blood circulating. In the meantime I was as careful about diet, paying attention to the effect of different foods. This was trouble, certainly, but it repaid me a hundred-fold. It soon became easy to remember these numerous little precautions; trifles, you may say. Yes, but there never was a truer saying than "Trifles make perfection."

I remember once a little girl seven years of age. I was boarding with her mother, who left heartily when I warned her of the evil effects

of very rich and highly seasoned food, especially fresh pork. It was during the season of sausage, spare ribs, and all those abominable oily, nauseating horrors of the hog-pen, and in three weeks' time the little girl's face presented the clearest confirmation of my words. It was coarse-grained, and had an ugly redness often seen on the countenances of those who eat grossly. I am satisfied if as parents and educators we would enlighten the minds of our young people there would be a complete revolution in these things.

If it is not God's intention that we should be beautiful in body as well as in mind and heart, why does the Bible so often say, "Man is the image and glory of God?" We make a great mistake in trying to raise our children indifferent to the claims of physical perfection. You may be sure if your children possesses any beauty they will be conscious of it. They either know it themselves or some one will enlighten them, and often it will be done in the most unwise manner. The commonest passport to a young girl's favor from her young gentlemen associates is thru this medium. So you would better tell them yourselves of the true value of personal attractions. There is no doubt that a fine, clear skin, a pair of bright, expressive eyes, soft, shining hair, and a rosy mouth with plenty of lovely white teeth, are loveable in themselves. Every thing that commands our love has power within itself.

The exquisite beauty of young children has a great deal to do with our affection for them. Of course, their innocent helplessness, their confiding faith in us, are the strongest appeals, but I do not think any one will deny the powerful charm of their dimpled hands, the sweet coloring of lips and cheek and silky ringlet, all combining to open our hearts to them. Maybe an angel is more beautiful than a beautiful child; but I doubt it.

Now, after having dwelt so long on this subject, my readers may wonder what all this has to do with teeth getting better and stronger as we grow more healthful. Well, I mean to impress on all those who may teach or educate others the importance of the best and easiest way to do so. Every one desires to be beautiful. To be beautiful we must be healthful. If we are healthful truly we must be so generally. That is, every department of the body must be attended to. And if we teach those under our influence that beauty, health, and comfort all go hand in hand, we have done much toward promoting the cultivation of those three graces. Can any thing be more beautiful than clean, sound, beautiful teeth? The dental teacher has the finest opportunity to impress his pupils—*i. e.*, patients—with all these principles, for he has all the talking to himself. And it is a solid comfort to know that if we grow stronger as we grow older our teeth improve also. That knowledge will have great influence toward helping us to take care of

our health. Tho the prevention of pain is not so powerful an argument as the promotion of beauty, yet it will be a great plea in favor of self-denial for the sake of health. Tell your patients so, and it will redound to your credit as a large-souled, liberal practitioner. Never fear it will materially lessen your income, for I am free to say there are very few who will avail themselves of such sensible advice. But then you will have done your duty, just as I have tried to do mine, and I will close by saying : God made us beautiful—he wisht us to retain his own perfect image, and it certainly is our duty to help carry out his designs. If thru no fault of ours we have but a small part of this precious heritage, still it does not free us from the obligation to take the very best care of that we do possess. Even with Adamic beauty, all would not look alike. I have always cherisht a belief that every one would have been beautiful in his own peculiar style, and it is just a mistake somewhere if each of us is not now to some degree. My only comfort has been that in heaven we will surely reach the culmination of what should have been here. And I am sure no one will find fault if I say that in that land of perfection every creature will be a living testimony of the beautiful handiwork of God !—*Head-light.*

Children's Teeth.—From the third till the sixth year the temporary teeth should remain in place. Then is the time of all others in life for a child to be good looking. It begins life looking about the mouth like its grandmother, or perhaps its mother, with the grinders in a bowl of water, or away to the shop for repairs ; but now there is perfect harmony between the little face and little teeth. How is it from six to twelve or thirteen, and from that to twenty, when an entire new set of teeth shall have taken the place of the first set ? It is moving time now in the poor child's mouth, so excuse him. For a while the new comers will look as if they would like to make themselves at home, if they could. A twelve year old boy will be overcome by his teeth as he would in a man's suit of clothes, only the other way.

Soon after the thirteenth year, those overgrown teeth will assume proper relations with the constantly growing face.

Would that there was no more trouble about children's teeth than that connected with their general development. It is said that everything has its enemy, its worm to destroy its symmetry.

If destruction is greater anywhere than in the child's mouth, I do not want to see it. It would seem the enemy could wait till mature age at least, if not till the natural forces begin to fail, when the eye grows dim and the ear deaf from age. But no ; in the average child's

mouth destruction is seen every time you look into its smiling face. You take courage, however, when the sixth year arrives, for you behold new teeth taking the place of the old ; but if you knew it all and knew how much longer the twelve back teeth were in coming than the first set, you might not think a dentist such a scoundrel after all for going and filling baby teeth when he knew they would come out.

Four important permanent grinders are pretty sure to put in an appearance just back of the temporary molars, a little before the front teeth begin to come out. Great wisdom is seen in this, as it secures to a child sixteen strong grinders during the few years he is changing his front teeth. But how is the average mortal to be made to understand all this, that these teeth need careful attention, that children from three to thirteen years of age should be as regular in their attendance on their dentist as the older folk, and even more so if they are to preserve their teeth in after life ?

It is said that "he who knows nothing fears nothing." I think sometimes, after trying with my best efforts to have parents know something on this subject, it might better be said : "He who fears nothing, knows nothing, and can never be made to understand."

One of our old colored bricklayers said to me once :

"Doctah, I always gits skeerd when I builds a chimbley."

When peple 'git skeerd' over their children's teeth and 'git skeerd' in time, and keep 'skeerd' all the time, then, and only then, will the poor child have the attention from the dentist that it should have."—*Dental Register*.

HEALTH IS WEALTH.

Just keep well in your mind that your health is your wealth,
And you'll prosper in life, and be better in health ;
Be a man, and resist what you know to be wrong,
Then your life will present a continual song.

It is putting our fingers in fire that gives pain—
It is foolishly burning our passions to gain
Transient pleasures that hurts us, and robs us of health,
And unfits us for all that we might gain from our wealth.

We are sometimes more foolsh than moths with the flame,
They are seeking the light and are never to blame,
But we seek what we know will prevent gaining wealth,
And will give us remorse in exchange for our health.

It is like the fool's nursing the toothake,—he knows
He's a fool for neglecting his teeth, yet he goes
Right along losing—what is better than wealth—
His strong teeth, which he knows are essential to health.

Editorial.

A SUDDEN RECOVERY FROM INSANITY.

In the late war, Charles S. Kingsley, a Union soldier from Mansfield, Pa., was so badly wounded that his head had to be patched up with silver plates. He became insane, and was sent to the Government Asylum, in Washington. After twenty years, one of the plates was readjusted and the man's reason returned like a flash. But he had no recollection of what had occurred since the day when he was wounded in battle. He was released, and steps were taken to secure for him the \$20,000.00, back pension, to which he is entitled. In addition to that, he will draw \$73.00 a month as long as he lives. The veteran found his family all right at Mansfield, but in destitute circumstances. The restoration of the husband and father in his right mind, and with a snug little fortune, must have made that family one of the happiest in the world.—*Dental Luminary.*

This accident reminds us of a case in practice, when we were a physician.

A young man fell down a shallow well, head foremost. He turned while in the water and came up apparently little hurt, but immediately became insane. He went to the house, changed his clothes, and started off. "Where are you going?" was asked. "Home." He afterward told us, this was the last thought or impulse he had on leaving the well. For three days hopes were entertained of his recovery without medical interference. Then we were sent for. On our arrival we began to examine his head. "What are you doing?" said he. "Only seeing if you are hurt." "I am not hurt," was his reply. "There is nothing the matter with me. I am only resting a little in this gentleman's house."

My first business was to convince him he was hurt. "Yes," said I "you must be injured in some way, for you have certainly lost your memory. You have lived in this house for years, and yet cannot tell the name of one of these people."

"You are mistaken," said he, "I never saw them before."

"But," I continued, "you cannot tell your father's name, nor your own." This staggered him. He acknowledged something must be wrong, for he could tell nothing of his past history, and consented to lay down on the lounge and be examined. He had struck on the back of his head so hard, there was severe contusion of the brain. Putting a bag of pounded ice for his pillow, I asked him to lay down; and causing all to leave the room, I soon got him into a sound sleep. In about three hours he awoke suddenly exclaiming, "Glory; I am all right!" and he was all right from that moment.

Now his memory was good on all things previous to his fall; all

since up to the moment of his awakening remained a blank. He remembered falling into the well, and so vivid was the fact he had gone there for water, that his first words now were—"There, I have not taken the water to the engin house ; I left the pail by the well." It seemed to him but a moment since he was there with the pail.—ED. ITEMS.

THE SCIENCE OF LIFE.

As the study of the science of life advances it becomes more and more divided into distinct specialties. Fifty years ago either anatomy or physiology was enuf to designate the whole subject ; for our teachers urged that the idea of the construction of things was so inseparable from their activities that one could not be properly considered without the other. While this is true, scientists have become so much more minute in their investigations, it has been found necessary to consider the general subject under several specific heads ; and in each of these departments, men spend their lives following out details.

We embrace the whole study of life under the term biology, as the science of all vegetable and animal living things, and the phenomena exhibited by them. This is divided into morphology, which treats of the forms and structure of living things, and physiology, which attempts to account for their modes of acting, and the causes producing these activities. These are again divided into vegetable and animal morphology and physiology. Still again comes another division under the name of histology. At first thot, this would seem to refer to the history of things ; but of this it has nothing to do, unless the origin of things,—the examination of the atoms of which they are composed,—is its history ; for histology treats of the minute structure of their texture as revealed under the microscope.

But we are not yet thru. How do these microscopic particles become atoms, and these atoms living things ? This is a broad question, treated under the name of,—what shall we say ? Chemical Affinity ? Electric Affinity ? Vitality ? Chemico-Vital ? Physico-Chemic ? What shall we call it ? It is a branch of our subject not yet sufficiently investigated to have a settled and well-defined definition, and yet one on which men have thot and written and controverted for ages. It is an interesting field. Physiologists tell us, "We cannot claim to know any laws governing living substance, which do not apply to that which is dead." If we concede this, it leaves the science of life under the shroud of pitiable darkness. Who shall lift the veil ? Seek to hide the fact by what means we will, there is a conviction in all studious minds, that the spheres of living and of dead substances are dissimilar. Call the difference by what name we will, there is a distinction as wide as between light and darkness, life and death.

Tho so many are groping in the dark, turning and overturning all creation to find it, we are inclined to think they must come back to that shroud with which they have covered the only explanation, and find beneath it the true answer—*vitality*. It is too subtle to be handled, too ethereal to be seen, too minute to be investigated, even by the microscope; yet a something the very presence of which rouses everything it touches, gives wonderful powers to that which was entirely powerless, actually breathing into it intelligence, and giving to it a specific sphere and irresistible purpose of life. If we cannot see it, we can judge it by effects. If we cannot feel it as an entity, we can be inspired by its activities. Is it all this without specific laws governing its forces, directing its aims, and bringing into maturity and perfection all that “lives and moves and has its being” in countless worlds? Really, if “we cannot claim to know any laws governing living substance which do not apply to that which is dead,” we have not learned our lesson in *the Science of Vitality*.

WHY THESE ORTHOGRAPHICAL CHANGES ?

Spelling is continually changing, and in many instances not for the better. For instance: Substituting ch for k, as in ache, for ake, ocher for oker; toothache for toothake; ch for q, as choir for quire; ch for c, as, chalcedony for calcedony; chameleon for cameleon; ch for k, as, chiliometer for kilometer; c or k for que, as, lacquer for lacker; clinique for clinic; mosque for mosk; mosquit for muskets; ph for f, as, phantom for fantom; phantasm for fantasm. There is also a tendency to add, in some words, superfluous letters, as ea for short e, as in leaven, for leven, meant for ment, endeavor for endavor, steadfast for stedfast: so also adding letters, as chestnut for chesnut, aghast for agast, champagne for champane, hemorrhoids for emerods, handsome for hansom, raspberry for rasberry, doubt for dout, warwhoop for warhoop, whooping-cough for hooping-cough, kiln for kill (for calcimining), mayhem for maim, subtle for sutle, sleight for slight, gauge for gage, mould for mold, hautboy for hoboy, hiccough for hickup, ledger for leger, mauln for mall. There is also a tendency to double consonants, as, dessert for desert, downfall for downfal, enrollment for enrolment, skillful for skilful, estoppel for estopel, fatener for fatener, haggard for hagar, misspell for mispel.

Most of these changes, with very many others, have gradually crept in without design, they are mere accidents, and only add confusion to our orthography.

Toothache is nature's complaint for long neglect. If you would escape it be prompt and intelligent in attending to your teeth.

Josiah Bacon Again. Is he Dead?—Wonderful man that? We thot he went to his reward in California, but here he is in New York again, under the name of *John H. Hubbell, Esq.* Who would have thot it? Dr. Chalfant, why were you imprisoned? This “John H. Hubbel, Esq.,” says he has paid ten thousand dollars for the privilege of stepping into Josiah Bacon’s shoes. Well, it is a pity Chalfant did not take those shoes instead of their owner. This gost of the renowned Josiah says, with these shoes he can walk right into the pockets of the dentists and abstract therefrom *three hundred thousand dollars!* Uncle Josiah has come again, sure. What a scattering there will be! Who will he first catch?

The Pennsylvania State College situated at State College, Center County, Pa. is a model institution. What is still better for a poor boy, its instructions are free. All the expenses for attending this college, for the full three year’s course is a trifle for room rent, fuel, light, and the use of furniture. Board can be had in private families for \$3.00 a week, or at the college club house at \$2.00; or a boy can board himself for still less. It cost me less than a dollar a week during my college course, and that in a large city.

Come boys who wants a collegiate education?

MISSOURI STATE DENTAL ASSOCIATION.

President, Wm. N. Conrad, St. Louis; First Vice President, R. R. Vaughn, Marshall; Second Vice President, T. M. Nicholson, Fayette; Recording Secretary, John G. Harper, St. Louis; Corresponding Secretary, Geo. L. Shepard, Sedalia; Treasurer, Jas. A. Price, Weston.

St. Louis, 516 Walnut St.

JOHN G. HARPER, *Rec. Sec’y.*

By request of the Executive Committee, the time for holding the Annual Meeting of the National Association of Dental Faculties has been changed from August 4th to Monday, August 2d, 2 p. m., at Niagara Falls.

Cincinnati, O., 128 Garfield Place.

H. A. SMITH, *Sec’y.*

Value your teeth as you value your fingers, and be as intelligent in the treatment of one as the other. With such attention few teeth would be lost.

The Iowa Dental Society had quite a successful session this year. These western states are beginning to carry the weight of the profession.

The Dental Section of the International Medical Congress is getting on nicely. Co-operation comes from every direction.

Miscellaneous.

THE GREAT QUESTION OF THE DAY.

The late Dr. Samuel D. Gross, the father of American surgery, used the following words in an address delivered at the dedication of the McDowell monument :

Young men of America, listen to the voice of one who has grown old in his profession, and who will probably never address you again, as he utters a parting word of advice.

The great question of the day is not this operation or that, not ovariectomy or lithotomy, or a hip joint amputation, which have reflected so much glory on American medicine, but preventive medicine, the hygiene of our persons, our dwellings, our streets, in a word, our surroundings, whatever or wherever they may be, whether in city, town, hamlet or country, and the establishment of efficient town and State boards of health, thru whose agency we shall be more able to prevent the origin and fatal effects of what are known as the zymotic or preventable diseases which carry so much woe and sorrow into our families and often sweep like hurricanes over the earth, destroying millions of human lives in an incredibly short time.

The day has arrived when the people must be roused to a deeper and more earnest sense of the people's welfare, and suitable measures adopted for the protection as well as for the better development of their physical, moral and intellectual powers. This is the great problem of the day, the question which you, as the representatives of the rising generation of physicians, should urge, in season and out of season, on the attention of your fellow citizens; the question which, above and beyond all others, should engage your most serious thoughts, and elicit your most earnest co-operation.

When this great object shall be attained; when man shall be able to prevent disease, and to reach with little or no suffering his three score years and ten, so graphically described by the Samist, then and not till then, will the world be a paradise.

ORTHOGRAPHY CONTINUALLY CHANGING.

It has been changing from the beginning of our language and is still changing. It is in the memory of most of us above sixty years of age when accountant was spelt accoumptant; achieve, atchieve; alchemy, alchymy; allege, alledge; ambergris, ambergrease; ancient, antient; andiron, handiron; apricot, apricock; billiards, balyards; calandar, kalandar; ceiling, cieling; choke, choak; choose, chuse; cloak, cloke; clothe, cloathe; complete, compleat; complexion, complexion; control, countrol or controul or comptrol; curb, kerb; docket, doquet; dotage, doatage; dowry, dowery; embalm, imbalm; embrace, imbrace; exude, exrude; fairy, faery; frenzy, phrenzy; garment, gaurment; gantlet, gauntlet; gibe, jebe; gimlet, gimblet; gnarled, knarled or knurled; heinous, hainous; icicle, isicle; landscape, landskip; lantern, lanthorn; linseed, lintseed; marshal, marischal or mareschall; placket, plaquet; phenix, phoenix; pie, pye; plaster, plaister; pliers, plyers; portray, pourtray; possessor, possessour; relic, relique; risk, risque; sentinel, centi-

nal ; sentry, centry or sentery ; show, shew ; siren, syren ; skull, scull ; sponge, spunge ; suitor, suiter ; tie, tye ; tiger, tyger ; vat, fat ; venomous, venemous ; vicious, vitious ; volcano, vulcano ; wiry, wiery ; wizard, wisard ; wondrous, wonderous ; yawl, yaul.

Spelling is changing quite as rapidly now. So rapidly that there are two thousand words with more than one authorized way of spelling.

THE VARIED MYSTERIES OF THE HEAVENS.

Our sun, with its solar system, in addition to all other varied motions, is moving at the rate of 160,000,000 miles a year, in what appears to be a direct motion toward the constellation Hercules. The region of space toward which this movement is tending is exceedingly rich in stars of peculiar brilliancy and many colors—the most of them are much greater than our sun. Besides the great constellation named we are also approaching Orion, with its galaxy of green suns. This cluster appears to be a golden cloud of stars clinging together like a swarm of bees, and yet separated from each other by billions of miles of space. Within the boundaries of this cluster there is also one of the most brilliant nebule which adorn the heavens—"the nebule of Orion"—which may be distinctly seen by a telescope of the smallest power.

We frequently speak of our sun moving toward a certain point ; but we seldom reflect that while we are moving toward a certain point, or a certain star, that star is also moving with great rapidity—it may be away from us, it may be toward us, it may be to the right or left at a greater or less angle, so that when we reach the point designated the star we are now approaching will be as far away from us as ever. Some stars are rushing from us while others are rushing toward us with almost incredible velocity.

Instruments have been constructed which can tell with absolute certainty whether we are approaching or receding from any given star. The stars we call "fixt" are so only because their immense distance from us renders their motion imperceptible, except to the most delicate instruments of astronomical measurement. Every star in the universe has various motions of revolution on its axis, revolution around other stars, and still greater movements of which we can form but a dim idea. The whole universe is in motion of the most inconceivably rapid character. The stars and suns are moving in every direction, but, all, no dout, in circles more or less elliptic. Nothing moves in a direct line ; curve is beauty, motion is life, a halt is death.

New stars are constantly appearing and others disappearing—that is, to our vision. No star, however, is lost. The economy of nature is perfect. The appearing and disappearing of stars is simply their greater or less luminosity. It requires a luminosity of the greatest brillianœ to traverse the inconceivable distances of interstellar space. A star which might be very bright at a certain distance would be invisible at a greater distance.

A new star has recently made its appearance in the constellation Orion, of which we have been speaking. This star presents some new and interesting characteristics which are being carefully studied by astronomers. M. Wolf says this star is similar to one of the most marvelous stars in the heavens—Misi Celi of the Whale. It is supposed to

be a variable star, which becomes visible and invisible by the increase or decrease of its conflagration. The number of variable stars is very great.

But the most wonderful and incomprehensible of all the mysteries of the heaven is its vastness—its utter illimitability. Should our sun, or any other sun, commence moving in a direct line at the rate of a thousand millions of miles a year, at the end of myriads of years it would be no nearer to the limits of the universe than when its motion first began. Also the number of worlds in space. Let the tiniest drop of water represent a sun; then count the number of such drops contained in all the oceans and seas of the world, and their number would just begin to represent the number of worlds in space. Nothing but an infinit mind can comprehend an infinit space.

MANICURE.

There are not nearly as many secrets in manicure as people imagin. A little ammonia or borax in the water you wash your hands with, and that water just lukewarm, will keep the skin clean and soft. A little oatmeal mixt with the water will whiten the hands. Many people use glycerin on their hands when they go to bed, wearing gloves to keep the bedding clean; but glycerin don't agree with every one. It makes some skins harsh and red. These people should rub their hands with dry oatmeal. The best preparation for the hands at night is white of egg, with a grain of alum dissolved in it. Manicures have a fancy name for it; but all can make it and spread it over their hands, and the job is done. They also make the Roman toilet paste. It is merely white of egg, barley, flour, and honey. They say it was used by the Romans in olden times. Anyway, it is a first-rate thing; but it is mean, sticky sort of stuff to use, and don't do the work any better than oatmeal. The rupest and hardest hands can be made soft and white in a month's time by doctoring them a little at bed-time, and all the tools you need are a nail-brush, a bottle of ammonia, a box of powdered borax, and a little fine white sand to rub off the stains, or a cut of lemon, which will do even better, for the acid of the lemon will clean anything. Manicures use acids in the shop, but the lemon is quite as good, and isn't poisonous while the acids are.—*N. Y. Analyst.*

Protect the Baby's Eyes.—Mother, did you ever think about the discomfort and suffering you frequently inflict on your dear little infant when you take it out riding? Some infants are large enough to sit up in their carriages, and *some* of the carriages, too, have tops on them. But others have not; and the children are too little to sit erect—they are placed in the coaches on their backs, with nothing to shade their eyes! Suppose you or I were placed on *our backs* in an open wagon without any veil, bonnet, or hat-rim, to keep the sun out of our eyes, how long, do you suppose we would enjoy the ride in the hot sun? Baby coaches, and young-folk's spectacles, are concomitant nuisances.

SYMPATHY.

PARAFFIN rubd on the dry walls and bottom of a cistern and melted into the cement with a hot iron is the most effectual method of keeping the water soft or free from lime. Cisterns, when plastered with pure Portland cement, generally give satisfaction.

DON'T UNDERVALUE THE BOY.

The following sound reasoning we find in the *American Agriculturist*. It would be a benefit to both fathers and sons if its precepts were more often regarded.

Too many men make their boys feel that they are of little account while they are boys. Lay responsibility on boys, and they will meet it in a manful spirit. On no account ignore their disposition to investigate. Help them to understand things. Encourage them to know what they are about. We are too apt to treat a boy's seeking after knowledge as mere idle curiosity. "Don't ask questions" is poor advice to boys. If you do not explain puzzling things to them, you oblige them to make many experiments before they find out; and the experimental knowledge is best in one sense, in another it is not, for that which can be explained clearly does not need experimenting with. If the principle involved is understood, there is no further trouble, and the boy can go ahead intelligently.

Do not wait for the boy to grow up before you begin to treat him as an equal. A proper amount of confidence, and words of encouragement and advice, and giving him to understand that you trust him in many ways, helps to make a man of him long before he is a man in either stature or years.

The Boston *Journal of Commerce* also makes a good suggestion to parents *apropos* to the above:

Give him tools, and let him find out for himself whether he has any mechanical taste or not. Do not discourage him, as parents are apt to do, by saying: "Oh, it is no use for you to try to do anything with tools. I never have any taste that way, and of course you have not." If a boy finds he can make a few articles with his hand, it tends to make him rely on himself. And the planning that is necessary for the execution of the work is a discipline and an education of great value to him. The future welfare and happiness of the boy depends on the surroundings of his youth. When he arrives at that period in his life that he is obliged to choose what profession or what line of business to follow, it is highly important he should take no false step. And if in his youth he has cultivated a taste for any particular branch, the choice of a profession or business will be made more easy.

THE fruit production of California is something wonderful. During 1885 she produced in raisins over 9,000,000 pounds, or nearly three times as much as in 1884. She also sent to market last year 1,500,000 pounds of prunes, 1,823,000 pounds of apples, 1,900,000 pounds of peaches, 1,139,000 pounds of plums, 650,000 pounds of apricots, 2,250,000 pounds of honey, 1,250,000 pounds of walnuts, 1,050,000 pounds of almonds.

FOR a bite from a rabid dog, Dr. Billings recommends that the wounds be cauterized with strong carbolic acid. It is much less painful and more effective than burning with a hot iron. The wounds will also heal in less time.

In a garden at Caledonia, N. Y., a bed of flowers has been laid out twenty-two feet long, to represent a huge trout. The gills, fins and eyes are represented by different colored flowers.